

## Biodiversity of the Bay Islands\*



**K. Thothathri**

Centre for Advanced Study in Botany  
University of Madras, Chennai - 600 025  
Tamil Nadu, India

The Andaman and Nicobars constitute the bay islands in the bay of Bengal. The Andaman group consists of 204 and the Nicobar group 22, large and small islands, occupying an area of 8400 sq.km. The islands enjoy a warm tropical climate with temperature ranging from 20°-32°C while the average annual rainfall varies from 300-350 cm.

Biodiversity is fully expressed in the flora, fauna and vegetation. The flora is rich and varied and distributed under the following types of vegetation (1) Mangrove forests (2) Beach or Littoral forests (3) Low and high level rain forests (4) Moist deciduous forests (5) Riverine vegetation (6) Vegetation in open, and (7) Exotics.

The mangroves are gregarious with *Rhizophora mucronata*, *R. apiculata*, *Bruguiera gymnorrhiza* and *Ceriops tagal* growing luxuriantly. Ecologically they are well adapted with vivipary, stilt roots, pneumatophores (Knee-roots), etc. *Nypa* palm grows in large population especially in the creeks and river mouths. The beach forests are noted for a variety of small trees like *Hibiscus tiliaceus*, *Pongamia pinnata*, *Calophyllum inophyllum*, *Cycas rumphii* and species of *Pandanus*.

Tropical rain forests exhibit stratification with the top most layer occupied by gigantic trees like species of *Dipterocarpus*, *Artocarpus chaplasha*, *Albizia lebbek*, *Endospermum malaccense*, etc. growing to a height of 30-40 m. The middle layer is composed of trees, ranging from 20-30 m such as *Planchonella longipetiolata*, *Planchonia andamanica*, *Canarium euphyllum*, *Mangifera andamanica*, etc. The bottom most layer consists of smaller trees like *Dillenia andamanica*, *Glycosmis pilosa*, and species of *Macaranga*, *Antidesma*, *Memecylon*, etc. The trees are intertwined by woody lianas like *Entada rheedi*, *Calamus andamanicus*, *Dinochloa andamanica*, etc. *Asplenium nidus*, *Drynaria quercifolia* and species of Polypodiaceae are the epiphytic ferns. Orchids such as species of *Dendrobium*, *Aerides*, *Cymbidium* thrive well on these trees. The forest floor is devoid of any herbaceous growth except few grasses.

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### K. Thoathatri

The deciduous forests possess mostly timber yielding species like *Terminalia procera*, *T. bialata*, *Pterocymbium tinctorium*, *Pterygota alata*, *Pterocarpus dalbergioides*, etc. Shrubby members of Euphorbiaceae dominate in this zone like species of *Macaranga*, *Antidesma*, *Mallotus*, *Glochidion*, etc.

The riverine vegetation is confined only to the Great Nicobar island where there are 2 fresh water rivers. These have an interesting flora with trees like *Anthocephalus chinensis*, species of *Syzygium*, *Ficus*, *Elaeocarpus aristatus*, *Symplocos nicobarica*, etc. *Phragmites karka* is the common reed on river banks.

The floristic diversity of the two groups of islands is marked. *Pterocarpus dalbergioides* and species of *Dipterocarpus*, prominent in the Andaman flora are absent in the Nicobars. Similarly *Cyathea albo-setacea*, a tree fern, characteristic of Nicobars does not occur in the Andamans. The structure and floristic composition of the different types of vegetation in both Andamans and Nicobars differ from each other.

Such diversities are seen in the fauna too. Wild boar, deer, viper are the common elements in the fauna while majority of the species belong to insects and fishes etc. The Malayan python of the Nicobars has not been reported in the Andamans.

The tribals (Great Andamanese, Jarawas, Onges, Sentinels) of the Andamans are of the negrito origin while the tribes (Nicobarese and Shompens) of the Nicobars belong to the mongolite origin.

morphology. Even today, when there is a great emphasis on characters obtained from various other sources, morphology continues to have an edge over other sources and there is no doubt that it would continue to reign taxonomically for more years to come. However, characters from other disciplines have often been used to solve taxonomic problems and disputes where morphological ones failed. One

### The use of wood anatomical characters in the taxonomy of Angiosperms

means new or recent. Infact, there has been a taxonomic procedure for a long time in the systematic treatments of some families of Angiosperms.

Melastomaceae, Icacinaceae, etc. Notable contributions have been made by Bureau, Solereder, Bailey, Metcalfe and Chalk, Swamy and Carlquist and others.

Several wood anatomical features have been proved to be of taxonomic value. These include the growth rings, porosity of the wood, features relating to the presence of imperforate tracheary elements and nature of rays, axial parenchyma, etc. This paper will bring to light the taxonomic significance of vestured fibres.

Vestured pits are bordered pits with the pit cavity wholly or partly filled with projections from the secondary/tertiary wall. Although vestured pits have been known for seventy five years, their structure, and taxonomic and phylogenetic significance were not fully understood till recently. The morphological nature of the vestiture may be filamentous, bead-like, coralloid, or foliate. The presence or absence of specific cell types of xylem, the chemical nature of vestitures as well as